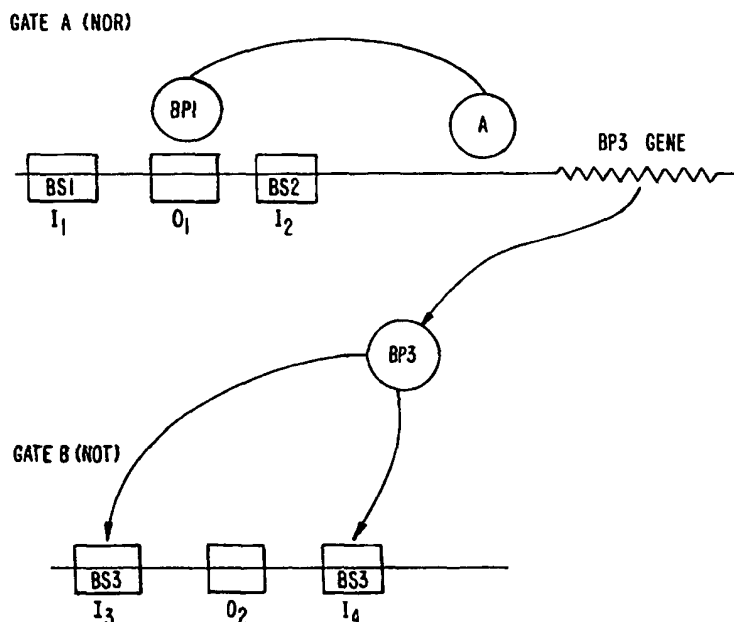


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(54) Title: MOLECULAR COMPUTING ELEMENTS: GATES AND FLIP-FLOPS**(57) Abstract**

This invention relates to novel molecular constructs that act as various logic elements, i.e., gates and flip-flops. The constructs are useful in a wide variety of contexts including, but not limited to, computation and control systems. The basic functional unit of the construct comprises a nucleic acid having at least two protein binding sites that cannot be simultaneously occupied by their cognate binding protein. This basic unit can be assembled in number of formats providing molecular constructs that act like traditional digital logic elements (flip-flops, gates, inverters, etc.).

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